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IPv6

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DISA/NS41
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Why IPv6?

- **IPv4 Address Space**

- **Shortage**

- **Most of the Available Address Space is Allocated**
 - **Future Internet Rich Nations Connecting**
 - **New Devices**
 - **New Applications**
 - **VOIP**
 - **Video**
 - **Cellulars/Phones**
 - **Industrial Devices**
 - **NAT is a poor solution**
 - **Breaks Internet Model**
 - **Security Problems**
 - **Connection State Maintenance**
 - **Routing Problems**
 - **Application Incompatibility**



Why IPv6? (con't)

- **IPv6 Features**

- **Address Space (128 bits)**
- **Auto-configuration and Mobility**
- **QOS**
- **Protocol Functionality - Multicast and Multimedia**
- **Security - Mandatory IPSec**
- **Unlimited Protocol Extensions**
- **Tag Switching (MPLS)**
- **Huge Packets**



Drivers

- **No Current DOD Mandate**
- **International Use / Connectivity**
 - **Need for IPv6 Only Resources**
 - **Collaboration**
 - **IPv6 Only Applications**
- **Feature Set Need**



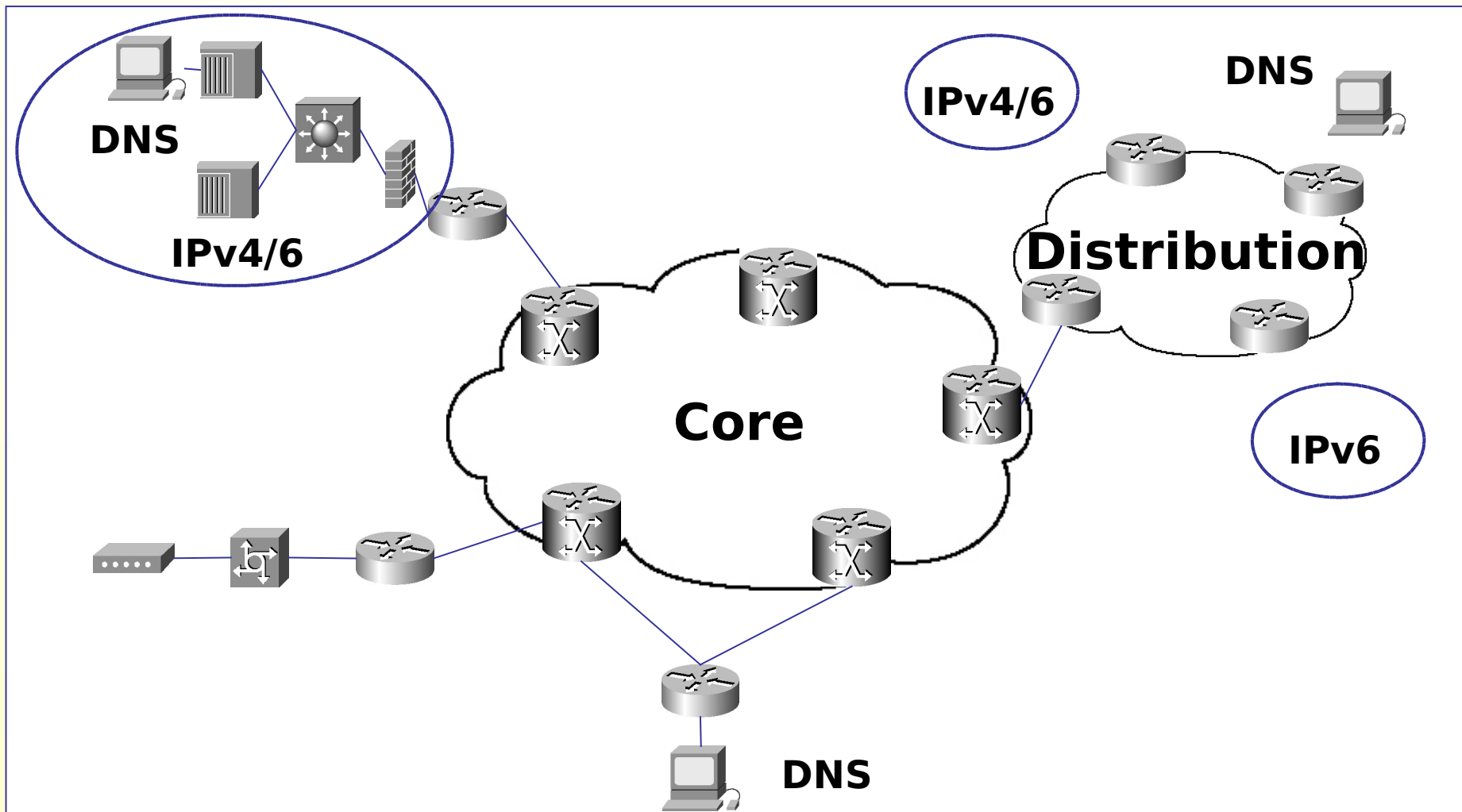
Transition

- **SIT - Simple Internet Transition**
- **Dual Stack Configurations (10 Years)**
- **DNS**
- **Operating Systems (Now)**
 - Windows
 - Unix
 - Linux
- **Applications (Soon)**
- **Networks (2 - 3 Years)**
- **Internetworks (3 - 5 Years)**



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Transition Scope



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Issues

- **DNS Quad A Records**
- **Security / Firewalls / Filtering**
 - Tunneling
- **Application Development**
 - TCP/IP Not Necessarily Transparent
- **Networking**
 - Tunneling
 - Protocols
 - IGP
 - BGP



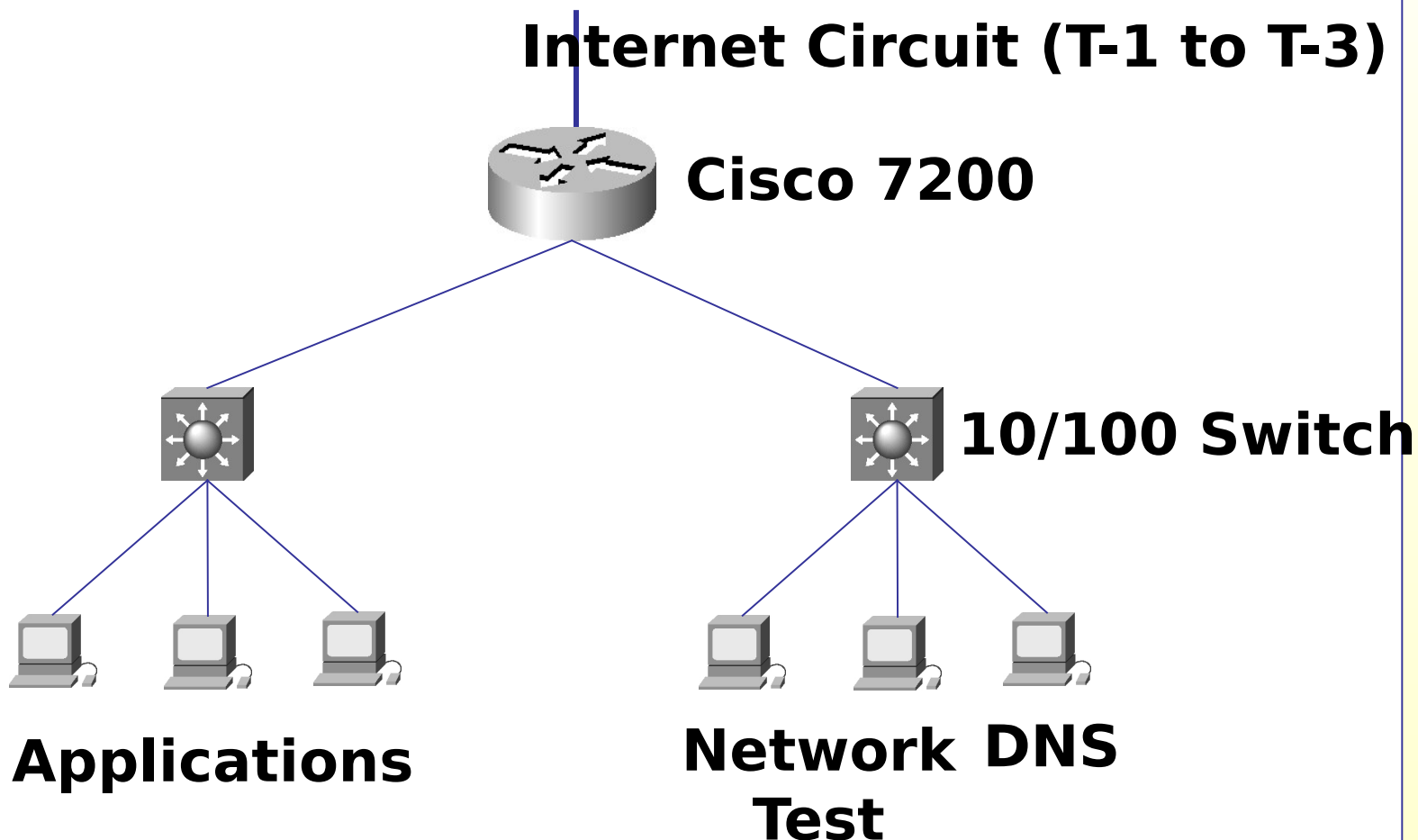
Next Steps

- **Finalize DOD Policy (OSD)**
- **Acquire DOD/US IPv6 Address Space (DISA)**
 - Working With IANA / Commerce
- **Build DISA/NEAF Test Bed**
 - `ipv6.iern.disa.mil`
- **Develop IPv6 Transition Strategy (DISA)**



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Test Bed



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